



CALSCIENCE

WORK ORDER NUMBER: 14-03-0196

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AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Hargis + Associates, Inc.

Client Project Name: ECP WQARF/ 1133.41

Attention: Brian Waggle
1640 S. Stapley Drive, Suite 209
Mesa, AZ 85204-6666

Approved for release on 03/14/2014 by:
Kristin Beckley
Project Manager

ResultLink ▶

Email your PM ▶



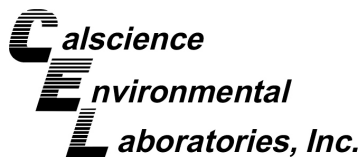
Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



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 Work Order Number: 14-03-0196

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Work Order Narrative

Work Order: 14-03-0196

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Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 03/04/14. They were assigned to Work Order 14-03-0196.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the CalScience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

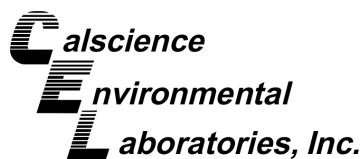
Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



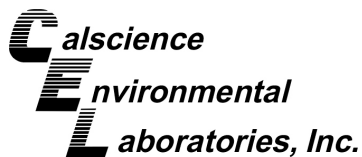
Sample Summary

Client: Hargis + Associates, Inc.	Work Order: 14-03-0196
1640 S. Stapley Drive, Suite 209	Project Name: ECP WQARF/ 1133.41
Mesa, AZ 85204-6666	PO Number:
	Date/Time Received: 03/04/14 13:15
	Number of Containers: 4

Attn: Brian Waggle

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
48-001 NW	14-03-0196-1	02/24/14 18:15	1	Air
48-001 OFF	14-03-0196-2	02/24/14 18:13	1	Air
48-001 SW	14-03-0196-3	02/24/14 18:17	1	Air
OA 48-001	14-03-0196-4	02/24/14 18:18	1	Air


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Detections Summary

Client: Hargis + Associates, Inc.
1640 S. Stapley Drive, Suite 209
Mesa, AZ 85204-6666

Work Order: 14-03-0196
Project Name: ECP WQARF/ 1133.41
Received: 03/04/14

Attn: Brian Waggle

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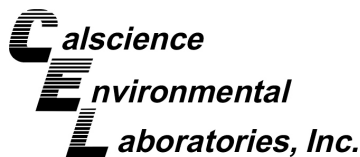
Client SampleID

<u>Analyte</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>Units</u>	<u>Method</u>	<u>Extraction</u>
48-001 NW (14-03-0196-1) Tetrachloroethene	1.4	J	0.41*	ug/m3	EPA TO-15	N/A
48-001 OFF (14-03-0196-2) Tetrachloroethene	1.8	J	0.46*	ug/m3	EPA TO-15	N/A
48-001 SW (14-03-0196-3) Tetrachloroethene	1.3	J	0.40*	ug/m3	EPA TO-15	N/A
OA 48-001 (14-03-0196-4) Tetrachloroethene	1.7	J	0.44*	ug/m3	EPA TO-15	N/A

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown



Analytical Report

Hargis + Associates, Inc.
1640 S. Stapley Drive, Suite 209
Mesa, AZ 85204-6666

Date Received: 03/04/14
Work Order: 14-03-0196
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: ECP WQARF/ 1133.41

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
48-001 NW	14-03-0196-1-A	02/24/14 18:15	Air	GC/MS YY	N/A	03/07/14 23:28	140307L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.
- Licensure by Arizona Dept. of Health Services under Environmental Laboratory Certificate AZ0781.

Parameter	Result	RL	MDL	DF	Qualifiers
Tetrachloroethene	1.4	5.3	0.41	1.57	J
Trichloroethene	ND	4.2	0.23	1.57	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	68-134	
1,2-Dichloroethane-d4	126	67-133	
Toluene-d8	99	70-130	

48-001 OFF	14-03-0196-2-A	02/24/14 18:13	Air	GC/MS YY	N/A	03/08/14 00:28	140307L02
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.
- Licensure by Arizona Dept. of Health Services under Environmental Laboratory Certificate AZ0781.

Parameter	Result	RL	MDL	DF	Qualifiers
Tetrachloroethene	1.8	6.0	0.46	1.78	J
Trichloroethene	ND	4.8	0.26	1.78	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	104	68-134	
1,2-Dichloroethane-d4	125	67-133	
Toluene-d8	97	70-130	

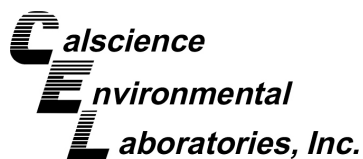
48-001 SW	14-03-0196-3-A	02/24/14 18:17	Air	GC/MS YY	N/A	03/08/14 01:23	140307L02
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.
- Licensure by Arizona Dept. of Health Services under Environmental Laboratory Certificate AZ0781.

Parameter	Result	RL	MDL	DF	Qualifiers
Tetrachloroethene	1.3	5.3	0.40	1.55	J
Trichloroethene	ND	4.2	0.23	1.55	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	68-134	
1,2-Dichloroethane-d4	126	67-133	
Toluene-d8	98	70-130	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
1640 S. Stapley Drive, Suite 209
Mesa, AZ 85204-6666

Date Received: 03/04/14
Work Order: 14-03-0196
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: ECP WQARF/ 1133.41

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
OA 48-001	14-03-0196-4-A	02/24/14 18:18	Air	GC/MS YY	N/A	03/08/14 02:19	140307L02

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.
- Licensure by Arizona Dept. of Health Services under Environmental Laboratory Certificate AZ0781.

Parameter	Result	RL	MDL	DF	Qualifiers
Tetrachloroethene	1.7	5.8	0.44	1.71	J
Trichloroethene	ND	4.6	0.25	1.71	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	105	68-134	
1,2-Dichloroethane-d4	128	67-133	
Toluene-d8	100	70-130	

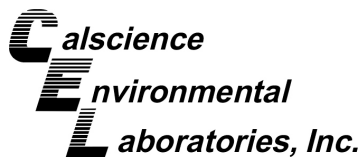
Method Blank	099-15-948-11	N/A	Air	GC/MS YY	N/A	03/07/14 17:18	140307L02
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Tetrachloroethene	ND	2.3	0.17	0.670	
Trichloroethene	ND	1.8	0.099	0.670	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	102	68-134	
1,2-Dichloroethane-d4	116	67-133	
Toluene-d8	101	70-130	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - LCS/LCSD

Hargis + Associates, Inc.
1640 S. Stapley Drive, Suite 209
Mesa, AZ 85204-6666

Date Received: 03/04/14
Work Order: 14-03-0196
Preparation: N/A
Method: EPA TO-15

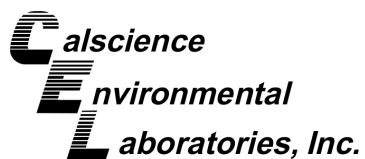
Project: ECP WQARF/ 1133.41

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-948-11	LCS	Air	GC/MS YY	N/A	03/07/14 13:07	140307L02			
099-15-948-11	LCSD	Air	GC/MS YY	N/A	03/07/14 13:58	140307L02			
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Tetrachloroethene	169.6	161.7	95	171.1	101	70-130	6	0-30	
Trichloroethene	134.3	138.1	103	140.1	104	70-130	1	0-30	

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RPD: Relative Percent Difference. CL: Control Limits



Summa Canister Vacuum Summary

Work Order: 14-03-0196

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Sample Name	Vacuum Out	Vacuum In	Equipment	Description
48-001 NW	-29.70 in Hg	-19.00 in Hg	D156	Summa Canister 6L
48-001 OFF	-29.70 in Hg	-17.00 in Hg	D840	Summa Canister 6L
48-001 SW	-29.70 in Hg	-15.00 in Hg	D743	Summa Canister 6L
OA 48-001	-29.70 in Hg	-20.00 in Hg	D184	Summa Canister 6L


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Glossary of Terms and Qualifiers

Work Order: 14-03-0196

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<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

LABORATORY CLIENT: <i>HARGIS & ASSOCIATES</i>		CLIENT PROJECT NAME / NUMBER: <i>ECP 1133.41</i>		P.O. NO.:
ADDRESS: <i>1640 S. STAPLEY SUITE 209</i>		PROJECT ADDRESS:		LAB CONTACT OR QUOTE NO.
CITY: <i>MESA</i> STATE: <i>AZ</i> ZIP: <i>85204</i>		CITY: <i>PHOENIX</i> STATE: <i>AZ</i> ZIP:		LAB USE ONLY
TEL: <i>480-345-0888</i> E-MAIL:		PROJECT CONTACT: <i>BRIAN WAGGEL</i>		
14-03-0196				

TURNAROUND TIME: <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input type="checkbox"/> 5 DAYS <input type="checkbox"/> 10 DAYS		SAMPLER(S): (NAME / SIGNATURE)	REQUESTED ANALYSES

[illegible]

****NOTE: TD-15 SIM IF NECESSARY TO REPORT AT 2 ug/m³**

[illegible]

Relinquished by: (Signature) <i>Marye Garman</i>	Received by: (Signature) <i>[Signature]</i>	Date: <i>2/27/2014</i>	Time: <i>11:30 AM</i>
Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>Seated Exp tracking</i>	Date: <i>2/27/2014</i>	Time: <i>3 PM</i>
Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>Pre Sent</i>	Date: <i>3/4/14</i>	Time: <i>1315</i>

From: (480) 345-0888
Mesa Branch
Hargis & Associates, Inc.
1640 S. Stapley Dr., Suite 209

Origin ID: HAEA



Mesa, AZ 85204

Ship Date: 28FEB14
ActWgt: 31.0 LB
CAD: 8669850/INET3490

Delivery Address Bar Code



SHIP TO: (714) 895-5494
Sample Control
Cal Science
1770 Lincoln Way

BILL SENDER

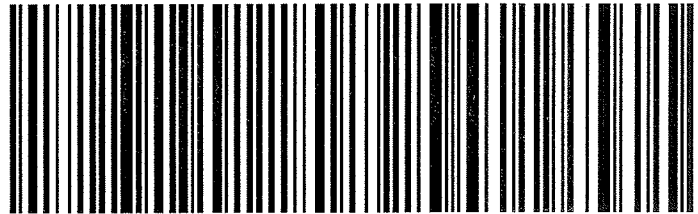
GARDEN GROVE, CA 92841

Ref # Summas(11332&&33.41 V) 11of14
Invoice #
PO #
Dept #

TUE - 04 MAR AA
** 2DAY **

TRK# 7980 7432 6579
0201

92841
CA-US
SNA

VZ APVA

522G1562F/F220

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WORK ORDER #: **14-03-0196**

SAMPLE RECEIPT FORM

Cooler 0 of 0

CLIENT: Hargis & Associates

DATE: 03/04/14

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature °C - 0.3 °C (CF) = °C ☐ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by:)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☒ Air ☐ Filter

Checked by: 846

CUSTODY SEALS INTACT:

☐ Cooler ☐ ☐ No (Not Intact) ☒ Not Present ☐ N/A

Checked by: 846

☐ Sample ☐ ☐ No (Not Intact) ☒ Not Present

Checked by: 300

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve () ☐ EnCores® ☐ TerraCores® ☐

Aqueous: ☐ VOA ☐ VOA_h ☐ VOA_{na2} ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_p ☐ 1AGB ☐ 1AGB_{na2} ☐ 1AGB_s

☐ 500AGB ☐ 500AGJ ☐ 500AGJ_s ☐ 250AGB ☐ 250CGB ☐ 250CGB_s ☐ 1PB ☐ 1PB_{na} ☐ 500PB

☐ 250PB ☐ 250PB_n ☐ 125PB ☐ 125PB_{znna} ☐ 100PJ ☐ 100PJ_{na2} ☐ ☐ ☐

Air: ☐ Tedlar® ☒ Canister **Other:** ☐ **Trip Blank Lot#:** **Labeled/Checked by:** 300

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** 846

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znna: ZnAc₂+NaOH f: Filtered **Scanned by:** 300